

Description of two new species of bathyal Cancellariidae (Mollusca, Gastropoda) from off Brazil

by André VERHECKEN

Abstract. — *Axelella brasiliensis* and *Brocchinia pustulosa* are two new Atlantic species of Cancellariidae taken by a Brazilian-French 1987 cruise in deep water (637-682 m) off South-East Brazil.

Résumé. — Une expédition brésilienne-française de 1987 a récolté, dans des eaux profondes (637-682 m), deux espèces de Cancellariidae qui sont ici reconnues comme nouvelles : *Axelella brasiliensis* et *Brocchinia pustulosa*, de provenance des mers du Sud-Est du Brésil.

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INTRODUCTION

The Western Atlantic south of the Equator has been conspicuously void of records of the family Cancellariidae. This is in sharp contrast to geographically near-by regions. The Caribbean has some 14 species (ABBOTT, 1984 ; OLSSON & BAYER, 1972 ; PETIT, 1976, 1983 ; VERHECKEN, 1984a ; PETUCH, 1987) ; tropical West America has 41 species (KEEN, 1971) ; and the Atlantic coast of Africa has 19 species (VERHECKEN, in preparation). The only cancellariid reported so far from Brazilian waters is a shallow-water species cited as *Cancellaria reticulata* Linné, 1767 (RIOS, 1985 : 127).

During the joint Brazilian-French cruise in 1987 with the oceanographic vessel " Marion-Dufresne ", a few cancellariid specimens were taken. As could be expected from the almost complete lack of knowledge on Brazilian cancellariids, they proved to be new to science. The present paper studies only the deep water species collected by that expedition ; the shallow-water ones will be published elsewhere. A cruise report and list of stations have been published by GUILLE & RAMOS (1988).

Abbreviations used in the text

MNHN = Muséum national d'Histoire naturelle, Paris, France.

MORG = Museu Oceanografico da Fundaçao Universidade do Rio Grande, Rio Grande, Brazil.

DESCRIPTION OF SPECIES

As the generic classification of Cancellariidae is still incompletely understood, and complicated by a large number of genera, no new genus-group names are introduced here. The use of *Brocchinia* and *Axelella* is a provisional choice.

Genus **BROCCHINIA** Jousseaume, 1887

Brocchinia Jousseaume, 1887 : 221.

TYPE-SPECIES (subsequent designation by SACCO, 1894 : 68) : *Brocchinia mitraeformis* (Brocchi) = *Voluta mitraeformis* Brocchi, 1814, non Lamarck, 1811 ; = ? *Brocchinia parvula* (Beyrich) *tauroparva* Sacco, 1894.

Brocchinia pustulosa sp. nov.

(Figs. 1-2)

TYPE-MATERIAL (all empty shells) : Holotype : 11.5 × 7.0 mm, MNHN ; paratypes : 11.6 × 6.4 mm (MNHN), 8.2 × 5.0 mm (MNHN), 7.9 × 4.2 mm (MORG 26713), 4.4 × 2.9 mm (MNHN).

TYPE-LOCALITY : N.O. "Marion-Dufresne" MD 55 Station CB 76, 18°59 S-37°50 W, 637 m. BOUCHET, LEAL & MÉTIVIER coll., May 1987.

DESCRIPTION

Shell relatively solid, off-white, turriculate, surface nodulose.

Protoconch (figs. 3-4) paucispiral, with 1-1 1/4 smooth, slightly deviated whorl. Protoconch/teleoconch transition clearly marked. Maximum width : 0.9 mm, visible height : 0.8 mm. Teleoconch with up to 4.5 whorls. First quarter whorl with only spiral sculpture. Spiral sculpture consists of four spiral cords, the adapical one forming the shoulder. The distance between this shoulder cord and the adjacent one is greater than the interspiral distance between the other cords. Beginning with the fourth whorl, a faint secondary spiral cord is formed. Axial sculpture consists of opisthocyrt ribs : 9, 14, 15, 20 on first to fourth whorl respectively ; where they cross the spiral lines, prominent nodules are formed, which give the shell a grossly granulated appearance. Suture impressed ; sutural ramp almost horizontal on the early whorls, sloping down to periphery on later whorls.

Aperture almost semicircular ; outer lip smooth inside. Columella vertical, with one low broad fold and the rim of the siphonal canal formed so that it might be taken for a second fold. Thin columellar glaze almost completely covering the umbilical chink.

DISCUSSION

This species apparently belongs to a same Pan-Atlantic genus as “*Admete*” *nodosa* Verrill & Smith in Verrill, 1885 from the NE and NW Atlantic, “*Admete*” *azorica* Bouchet & Warén, 1985 from the Central Atlantic, and “*Admete*” *decapensis* Barnard, 1960 from off South Africa. These species are here transferred to *Brocchinia* because of the form of the aperture, especially the columellar side, and the short siphonal canal. As far as can be judged from its severely corroded holotype, *B. decapensis* is closest to *B. pustulosa* in general form. It has about 18 axial ribs on the last whorl, but about 7-8 spiral series of tubercles on the ribs. Moreover, *B. decapensis* is larger : with 4 teleoconch whorls, it measures 27×15 mm. *Brocchinia pustulosa* with 4.5 whorls measures 11.5×7.0 mm. The shells of *B. nodosa* and *B. azorica* are relatively broader than that of *B. pustulosa*. *Brocchinia clenchi* Petit, 1986 has a slightly more elongated form, and typically reaches a height of only 6 mm.

A nodulose sculpture more pronounced than, but similar to that of *B. pustulosa* is a feature of the Oligocene New Zealand species *Oamaruia gemmata* Maxwell, 1969, but that species has three spiral lines of nodules, 28 axial ridges on the body-whorl, 3 columellar folds, 7 lirae inside the outer lip, and a multispiral protoconch.

Also, *Merica haweraensis* Laws, 1940, from the Pliocene of New Zealand, has a sculpture superficially similar to that of *B. pustulosa*, but the fossil species is larger, has more columellar folds, a canalliculate suture, an umbilical area surrounded by a siphonal fasciole, and lirae on the inner side of the outer lip.

Genus AXELELLA Petit, 1988

Axelella Petit, 1988 : 130, new name for *Olssonella* Petit, non *Olssonella* Glibert & Van de Poel, 1967.

TYPE-SPECIES (by original designation for *Olssonella* Petit) : *Cancellaria smithii* Dall, 1888, Recent Caribbean.

Axelella brasiliensis sp. nov.

(Figs. 5-6)

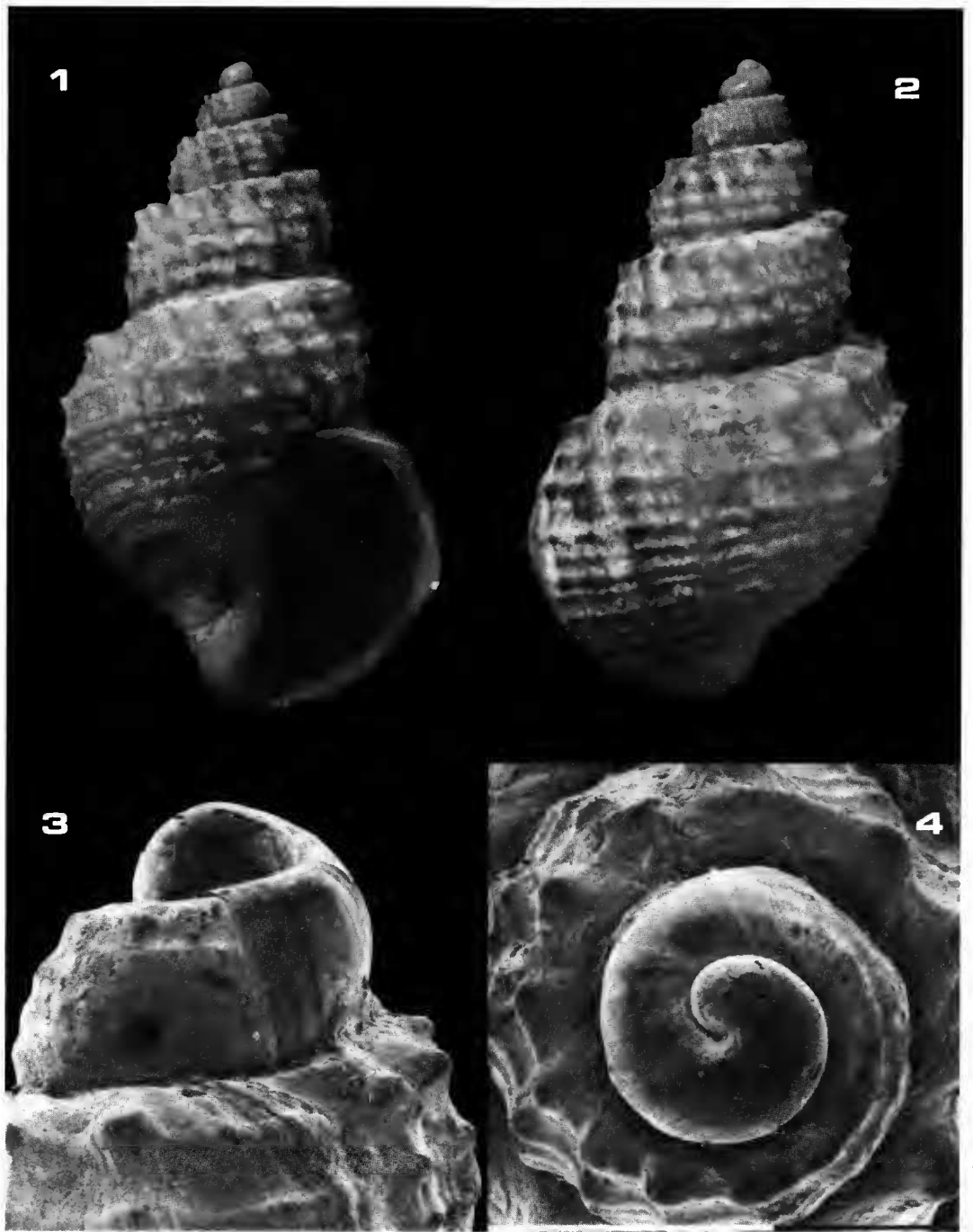
TYPE-MATERIAL : The species is only known from the holotype : 4.8×2.0 mm, MNHN.

TYPE-LOCALITY : N.O. “Marion-Dufresne” MD 55, Station SY 74, 682 m, $18^{\circ}58' S-37^{\circ}49' W$. BOUCHET, LEAL & MÉTIVIER coll., May 1987.

DESCRIPTION

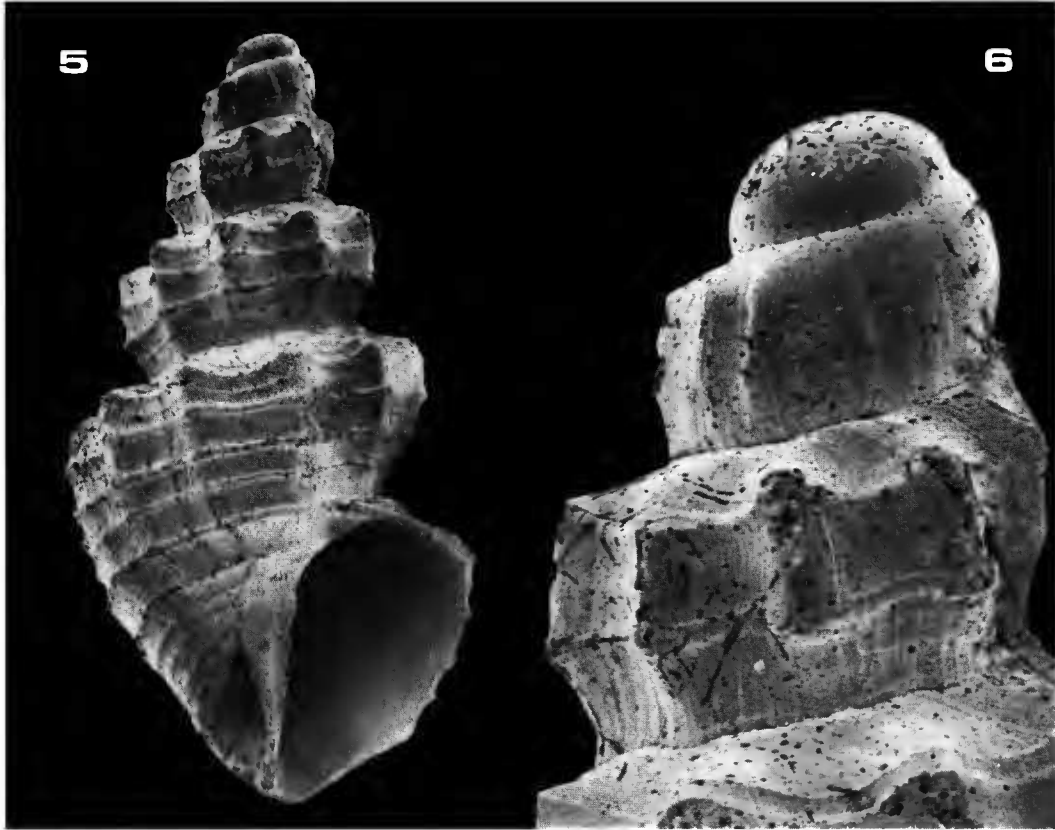
Shell small, thin-walled, spire highly turriculate, aperture small.

Protoconch bulbous, paucispiral with $1 \frac{1}{8}$ whorls ; maximum diameter 0.55 mm, height 0.5 mm. No sculpture is evident on the protoconch which shows only traces of corrosion and/or dissolution. Protoconch/teleoconch transition indistinct. Teleoconch with $3 \frac{7}{8}$ whorls ;



FIGS. 1-4. — *Brocchinia pustulosa* sp. nov. : 1-2, holotype, 11.5 × 7.0 mm, MNHN ; 3-4, protoconch of paratype 4, MNHN, × 47.

suture deeply impressed, sutural ramp relatively wide and sloping down to the periphery. Spiral sculpture of 2, 5, 6 narrow cords on second to fourth whorl respectively ; broad rounded axial ribs numbering 10, 10 and 9 on first to third teleoconch whorl, and 10 on the body-whorl. Sutural ramp with one narrow spiral cord close to the shoulder on early whorls, but for the rest unsculptured and only slightly undulated near the axial ribs. Aperture rounded triangular, obliquely truncated adapically, height 1.3 mm, width 0.9 mm. Outer lip thin, with no inner lirae. Columella straight, with two small oblique folds. Thin columellar callus reflected over, but not closing, the narrow umbilicus.



Figs. 5-6. — *Axellella brasiliensis* sp. nov. : 5, holotype, 3.8 × 2.0 mm, MNHN ; 6, protoconch of holotype, × 80.

DISCUSSION

The Atlantic species most resembling *A. brasiliensis* is *Cancellaria minima* Reeve, 1856, from the Eastern Atlantic near Madeira. It was transferred to *Olssonella* Petit (= *Axellella* Petit) by BOUCHET & WARÉN (1985) who also gave a figure of it. When the biometric data of *A. brasiliensis* are compared with those of *A. minima* (VERHECKEN, 1984), it shows that *A.*

brasiliensis has height and width agreeing with those of the distribution maxima for *A. minima*, but values for protoconch maximum diameter, number of teleoconch whorls, and number of spirals on penultimate whorl are situated excentrically in the distribution graphs (VERHECKEN, 1984, fig. 1) or even completely outside of them for the relative height of aperture. Further differences exist. At 3.75 teleoconch whorls, *A. brasiliensis* measures 3.7 mm while *A. minima* with that number of whorls is 6.3 to 7 mm high (LUQUE *et al.*, 1985 ; GUBBIOLI & NOFRONI, 1985). Also, the protoconch of *A. brasiliensis* is smaller and more mammilated than that of *A. minima*, which is slightly deviated and has a deep suture. Although corroded on the holotype, the protoconch lacks the elaborate sculpture of *A. minima*, as figured by VERHECKEN (1984 : fig. 4) and by BOUCHET & WARÉN (1985 : fig. 693). *Axelella brasiliensis* has squarely shouldered whorls with a deep suture and broad, rounded axial ribs, whereas *A. minima* has regularly convex whorls with a less impressed suture, and narrow, well-defined axial ribs. The sutural ramp of *A. brasiliensis* is almost without sculpture, in *A. minima* several spiral lines are present.

Cancellaria (Trigonostoma?) microscopica Dall, 1889 from the Caribbean (figured by DALL, 1902 : pl. 29, fig. 4) is about the same size as *A. brasiliensis*, but is quite distinct by having regularly convex whorls ; the aperture is “ rounded behind and hardly angular in front ” (DALL, 1889 : 131), with an outer lip faintly lirate inside ; a single extremely faint columellar fold is present and the umbilicus is wider than in *A. brasiliensis*.

Axelella brasiliensis also resembles fossil species such as *Cancellaria panones junipera* Harris, 1985, and related forms from the Eocene of Texas ; and some specimens of *C. fusiformis* Cantraine, 1835, from the Eocene of Europe, as figured by JANSSEN (1984 : pl. 1, fig. 12). The taxa, although small themselves, are larger than this new species.

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